

L 39315-65

ACCESSION NR: AP5005391

films were produced when the latex-to-polyamide ratio was 2:1. The physicochemical properties of the films were tested on a dynamometer Polyani. Films obtained at pH = 10 and viscosity of 11.5 centipoises were uniform in structure and properties. Their tensile strength exceeded by a factor of 3 the strength of latexes. This property increased further after 1-hr thermal treatment at 100C. To increase the resistance to water the material was tanned with chromium salts. In this respect the use of Cr_2O_3 extract at 50 gal/liter gave positive results. The relation between tensile strength and relative elongation of films treated with chromic extract is shown on Fig. 1 of the Enclosure. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Moskovskiy tekhnologicheskii institut legkoy promyshlennosti (Moscow Technological Institute of Light Industry)

SUB CODE: OC

SUBMITTED: 00

ENCL: 01

NO REF SOV: 015

OTHER: 001

Cord 2/3

L 23228-66 EWT(m)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) IJP(c) GB/RM

ACC NR: AP6013597

SOURCE CODE: UR/0191/65/000/002/0032/0034

AUTHOR: Afanas'yev, A. M.; Pavlov, S. A.; Karpov, V. L.; Zverev, B. I.

ORG: none

TITLE: Roentgenographic investigation of modified polyamides

SOURCE: Plasticheskiye massy, no. 2, 1965, 32-34

TOPIC TAGS: polyamide, polymer, irradiation resistance, radiation shielding, nuclear shielding, boron, lead, epoxide, polyurethane, chromium compound

ABSTRACT: The modification of polymers with mineral substances has great importance to the preparation of materials resistant to nuclear radiation. Materials are known which are dispersions of compounds of boron and lead in epoxide, polyurethane, and silicone bonds which are not inferior to boron and lead in ability to deflect slow neutrons and gamma rays. Coverings based on these dispersions are more effective than covering made from other materials for protection from nuclear radiation. These materials can be used for making special protective clothing, for enclosing x-ray installation, etc. Upon considering the value of the effect caused in mixed polyamide compounds of trivalent chromium, the authors studied the effect of various doses of ionizing radiation on the structure of polyamide AK 50/50 (obtained by the polycondensation of AG-salt and E-caprolactum in a 1:1 ratio) modified with chromium chloride. Radiation was conducted at 20° C in the presence of air on the "K-20000", an installation for radiation-chemical investigations, which has a source of gamma radiation from Co-60 with an activity of 20000 gram-equivalents of Ra. Polyamide S-6 obtained

UDC: 678.675.01:543.422.8

78
B

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ACC NR: AP6013597

on the basis of AG-salt-SG-salt and epsilon-caprolactum in a 1:1:1 ratio, was also used in the study. It was concluded that the introduction of considerable quantities of trivalent chromium salts into a solution of mixed polyamides results in the loss of crystallinity of the film material obtained. The action of gamma radiation up to 200 milliroentgen doses does not cause substantial changes in structure. Further, when the content of the chromium chloride in the polyamide is insignificant its action is expressed in the fixation of the structure formed; when the content is high, it is expressed in the opening of the chains and blocks of macromolecules and in the disturbance of their ordering. Finally, the introduction of glycerine accelerates the loss of crystallinity of the polyamide S-6 during radiation but at a lower rate than the radiation-caused changes of the mechanical and other properties of this polyamide. The structure of polyamides AK 50/50 and S-6, even after addition of a plasticizer, exhibits considerable stability in the action of radiation in the dose range up to 500 milliroentgen dose. Orig. art. has: 2 figures and 3 tables. [JPRS]

SUB CODE: 11, 18 / SUBM DATE: none / ORIG REF: 009

Card 2/2

L 47045-66	EWI(m)/EWP(j)/T	IJP(c)	RM
ACC NR: AP6023405	(A)	SOURCE CODE: UR/0323/66/000/002/0078/0084 39 38	
AUTHOR: <u>Belokopytova, V. S.</u> (Engineer); <u>Kalinina, L. Ye.</u> (Candidate of technical sciences); <u>Pavlov, S. A.</u> (Doctor of technical sciences, Professor)			
ORG: [Belokopytova; Kalinina] <u>All-Union Research Institute of Film Materials and Artificial Leather (Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh materialov i iskusstvennoy kozhi)</u> ; [Pavlov] <u>Moscow Technical Institute of Light Industry (Morskoviy tekhnologicheskii institut legkoy promyshlennosti)</u>			
TITLE: Vulcanization of latex films for the production of polymer film materials by the ionic deposition method			
SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 2, 1966, 78-84			
TOPIC TAGS: synthetic material, vulcanization, gel			
ABSTRACT: The present investigation is devoted to vulcanization of latex gels relative to the production of <u>artificial leather</u> . ² Ionic deposition was used to obtain latex gels. The carboxyl-containing latex <u>SKN-40-1GP with 3% methacrylic acid</u> ¹ was used as the main film-forming latex. Even though with ionic deposition the gels have an open structure, upon drying there is a tendency toward consolidation and formation of monolithic films. Therefore, the main task			
Cord 1/2			

L 06346-67 EWP(j)/EWT(m) IJP(c) GG/RM/WW
ACC NR: AP6030324 (A,N)

SOURCE CODE: UR/0153/66/009/003/0480/0485

AUTHOR: Afanas'yev, A. M.; Pavlov, S. A.

ORG: Department of Technology of Artificial Leather and Film Materials, Moscow Technological Institute of Light Industry (Kafedra tekhnologii iskusstvennoy kozhi i plenochnykh materialov, Moskovskiy tekhnologicheskii institut legkoy promyshlennosti)

TITLE: Thermomechanical properties of irradiated polyamides cross-linked with chromium chloride

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 3, 1966, 480-485

TOPIC TAGS: chromium compound, chloride, polyamide, irradiation effect, gamma radiation, thermomechanical property

ABSTRACT: An attempt was made to determine the extent to which the addition of a cross-linking chromium complex (chromium chloride) followed by irradiation with Co^{60} γ rays affects their thermomechanical properties of films of mixed-type polyamides. The film-forming polyamides were AK 50/50 and S-6. The results of thermomechanical tests confirmed x-ray diffraction data obtained earlier to the effect that the introduction of increased amounts of chromium chloride causes the structure of the film material to change from an amorphous-crystalline state to an amorphous one. At the same time, the thermal stability of the films increases, and the flowability disappears in the temperature range under consideration (25-300°). Under the influence of

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UDC: 678.01:53+678.028+541.15

L 06346-67
ACC NR: AP6030324

integral doses of γ radiation up to 500 Mrad, the cold flow of polyamide films with a high chromium chloride content increases, and as the temperature approaches 300°C, the temperatures of the initial components, these polyamides change into a viscofluid state. It was found that even the formation of a weak radiation network of gel between the macromolecules in polyamide films which were first cross-linked with a salt of chromium (III) requires integral radiation doses that are at least one order of magnitude higher than the doses corresponding to gel formation in the initial polyamides. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 06Jun64/ ORIG REF: 007/ OTH REF: 001

Card 2/2 INKE

L 07544-67 ENP(j)/EWI(m) IJP(c) RM
ACC NR: AP6014711 (A) SOURCE CODE: UR/0323/65/000/006/0028/0031 19

AUTHOR: Korol'kov, N. V. (Engineer); Pavlov, S. A. (Dr. of technical sciences; Prof.)

ORG: Moscow Technological Institute of Light Industry (Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti)

TITLE: Synthesis of hexamethylene-bis-iminoacetic acid for preparation of polyamides used in the production of artificial leather. 1. Study of condensation of methyl monochloroacetate with disodium hexamethylenediamine

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 6, 1965, 28-31

TOPIC TAGS: synthetic material, leather, chemical synthesis, hexamethylenediamine, condensation reaction, methyl acetate

ABSTRACT: A reaction proposed for preparing alkyl esters of hexamethylene-bis-iminoacetic acid and the latter by hydrolysis did not give the expected results. The synthesis was studied to find routes more convenient than the hydrolysis of nitriles, obtained by condensation of diamines, ketones, or aldehydes and hydrocyanic acid. The solution of 23 g Na in 350 ml methanol reacted under reflux with 58 g hexamethylene-diamine to give disodium hexamethylenediamine ($\text{NaHN}(\text{CH}_2)_6\text{NHNa}$). After washing and

drying, 165 g of the precipitate was added to a stirred and ice-cooled vessel containing 210 g methyl monochloroacetate and reacted 1.5 hr at room temperature. Mixing

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ACC NR: AP6014711

with chloroform and water, extraction with chloroform and crystallization gave a product of 101—103C mp, and after hydrolysis with acid or basic agents a compound tentatively identified by elemental analysis as $\text{ClCH}_2\text{CONH}(\text{CH}_2)_6\text{NHCOCH}_2\text{Cl}$. Thus, the re-

action with methyl monochloroacetate proceeds via cleavage of ester and formation of amide bonds and cannot be used for the synthesis of hexamethylene-bis-iminoacetic acid. Orig. art. has: 3 formulas.

SUB CODE: 07// SUBM DATE: 27Feb65/ ORIG REF: 002/ OTH REF: 004
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Cord 2/2 p. 1

ACC NR: AP7002538

(A)

SOURCE CODE: UR/0413/66/000/023/0012/0012

INVENTOR: Knyazev, N. N.; Bokov, Yu. S.; Lavrishev, V. P.; Pavlov, S. A.

ORG: none

TITLE: Preparative method for crosslinked polymer coatings. Class 8, No. 188942

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 12

TOPIC TAGS: polymer coating, chlorosulfonated polyethylene, polymer crosslinking, UV irradiation

ABSTRACT:

An Author Certificate has been issued for a method of preparing crosslinked chlorosulfonated polyethylene-based polymer coatings with improved mechanical properties. The method involved application on the substrate of a chlorosulfonated polyethylene solution containing added triethylene glycol dimethacrylate and a sensitizer [unspecified], removal of the solvent by drying, and UV irradiation.

SUB CODE: 11, 07/ SUBM DATE: 17Dec64/ ATD PRESS: 5112

UDC: 678.741-416-9:547.391.3'422.2

Card 1/1

ACC NR: AP6033910

(A)

SOURCE CODE: UR/0323/66/000/004/0050/0056

AUTHORS: Prokhorov, L. I. (Engineer); Khromova, N. S. (Candidate of technical sciences, Docent); Pavlov, S. A. (Doctor of technical sciences, Professor)

ORG: Moscow Technological Institute of Light Industry (Moskovskiy tekhnologicheskii institut legkoy promyshlennosti)

TITLE: The influence of the type of diisocyanate and of blocking substances on the properties of porous materials manufactured from carboxyl-containing rubbers

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 4, 1966, 50-56

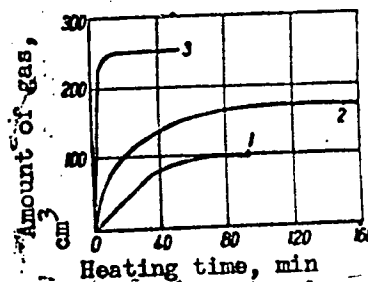
TOPIC TAGS: polymer, rubber, toluene diisocyanate, methylmethacrylate / SKS-30-1 rubber

ABSTRACT: The properties of porous materials obtained by the action of 2,4-toluylene diisocyanate and of hexamethylenediisocyanate respectively, blocked with either acetoacetic ester or with tertiary butyl alcohol, on the carboxyl-containing rubber SKS-30-1, were investigated. The investigation supplements the results of L. I. Prokhorov, N. S. Khromova, and S. A. Pavlov (Polucheniye poristyykh struktur s ispol'zovaniyem blokirovannogo tolulendiizotsianata, Izvestiya vysshikh uchebnykh zavedeniy, Tekhnologiy legkoy promyshlennosti No. 3, 1966). The rate of gas evolution during heating and the mechanical properties of the products were determined.

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ACC NR: AP6033910

Fig. 1. Dependence of the amount of gaseous products formed during the interaction of free and blocked toluylendiisocyanate respectively with methylmethacrylate on the period of heating at 150C. 1 - blocked diisocyanate; 2 - free diisocyanate; 3 - free diisocyanate in the presence of triethylamine



The experimental results are summarized in graphs and tables (see Fig. 1). It was found that the introduction of 2,4 toluylenediisocyanate blocked with acetoacetic ester into rubber SKS-30-1 yields a better product than does the introduction of hexamethylenediisocyanate, similarly blocked, into the same substrate. Orig. art. has: 3 tables and 3 graphs.

SUB CODE: 11/ SUBM DATE: 03Nov65/ ORIG REF: 002/ OTH REF: 002

Card 2/2

L 38365-66 ENT(m)/EWP(1) RM

ACC NR: AP6019943

(A)

SOURCE CODE: UR/0323/66/000/001/0033/0036

AUTHOR: Korol'kov, N. V. (Engr.); Pavlov, S. A. (Prof.; Dr. of Technical Sciences)

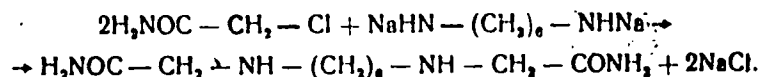
ORG: Department of Technology of Polymer Film Materials and Artificial Leather, Moscow Technological Institute of the Light Industry (Kafedra tekhnologii polimernykh plonochnykh materialov i iskusstvennoy kozhi Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti)

TITLE: Synthesis of hexamethylene-bis-iminoacetic acid for the purpose of obtaining polyamides for artificial leather production. Report No. 2: Study of the reaction between the disodium derivative of hexamethylenediamine and monochloroacetamide

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 1, 1966, 33-36

TOPIC TAGS: organic amide, hexamethylenediamine, hydrolysis, organic imine compound

ABSTRACT: The reaction of the disodium derivative of hexamethylenediamine with chloroacetamide was carried out by preheating the two reactants in solution, then cooling the reaction vessel once the reaction had started. The reaction is



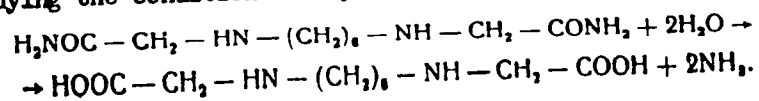
Multiple recrystallization from hot CCl_4 produced hexamethylene-bis-iminoacetic acid

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L 38365-66

ACC NR: AP6019943

in about 65% yield. In order to identify the amide obtained, the content of total nitrogen was determined by Kjeldahl's method, and the amide nitrogen was determined while also studying the conditions of hydrolysis of the amide:



The optimum time of hydrolysis and its extent were determined from the amount of ammonia evolved. Orig. art. has: 1 table.

SUB CODE: 07 / SUBM DATE: 27Feb65 / ORIG REF: 001 / OTH REF: 003
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Cord 2/2 vmb

GOLUTVINA, L.F., kand. tekhn. nauk; PAVLOV, S.A., doktor tekhn. nauk;
IVANOVA, Ye.I., nauchnyy sotrudnik; POPOVA, P.A., nauchnyy
sotrudnik; ZADVORNOV, V.P., nauchnyy sotrudnik

Operational properties of fireproof coated materials. Nauch.-
issl. trudy VNIIPK no.14:83-92 '63. (MIRA 18:12)

FIRSOVA, K.A., kand. tekhn. nauk; BADANINA, A.I., kand. tekhn. nauk;
ZOLOTOV, V.I., inzh.; PAVLOV, S.A., doktor tekhn. nauk

Some characteristics of leather fibers used for the
manufacture of artififical leather. Report No.3: Effect
of the relative moisture of air on the structure formation
of artificial leather. Nauch.-issl. trudy VNIIPK no.14:
10-15 '63. (MIRA 18:12)

ABRAMOVA, V.V., starshiy nauchnyy sotrudnik; PLOTNIKOV, I.V., kand. tekhn. nauk; FREYDGEYM, K.I., mladshiy nauchnyy sotrudnik; PISARENKO, A.P., doktor khim. nauk, prof.; PAVLOV, S.A., doktor tekhn. nauk, prof.

Manufacture of artificial suede type leather without salt washout. Nauch.-issl. trudy VNIIPK no.14:156-163 '63.
(MIRA 18:12)

SAMUSHKINA, M.A., nauchnyy sotrudnik; PAVLOV, S.A., dokt. tekhn. nauk,
prof.; PLOTNIKOV, I.V., kand. tekhn. nauk

Adhesion of butadiene-nitrile rubber (BRN-26) to cellophane
and polyamides. Nauch. issled. trudy VNIITK to. 14, 134-147, 1971,
1971A, 9.

SHMELEVA, T.A.; GRIGOR'YEVA, N.V.; PAVLOV, S.A.; LEVINA, V.I.

Use of polyacrylates for the strengthening of the skin of
sheep pelts. Kozh.-obuv. prom. 7 no.9:33-35 S '65.

(MIRA 1:9)

L 7890-66 EWT(m)/EPF(c)/EWP(j)/T/ETC(m) WW/EM

ACC NR: AP5024957

SOURCE CODE: UR/0286/65/000/016/0020/0020

AUTHORS: Golutvina, L. F.; Pavlov, S. A.; Avilov, A. A.; Butuzkina, Z. A.;
Tsentsiper, Z. B.; Plotnikov, I. V.; Abramova, D. S.; Strel'tsova, V. I.

ORG: none

TITLE: Method for obtaining fireproof coverings. Class 8, No. 173702

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 20

TOPIC TAGS: fireproofing, fireproof covering, sodium bicarbonate, potassium bicarbonate, aluminum sulfate, *high polymer, protective coating, fire resistant material, high temperature coating*

ABSTRACT: This Author Certificate presents a method for obtaining fireproof coverings on the basis of *high polymeric materials* containing antipyrenes. To obtain *self-extinguishing* foam-forming coatings *possessing high fire resistance* and low heat conduction, a mixture of strong bases (for instance, sodium or potassium bicarbonate), salts of strong acids (for instance, aluminum sulfate), and salts containing water of crystallization (vitriols, alums, and others) are used as antipyrenes.

SUB CODE: *MT*/ SUBM DATE: 29Dec62

Card 1/1

UDC: 678.049.91

DOBRYNINA, L.Ye., assistant; PAVLOV, S.A., doktor tekhn. nauk, prof.

Properties of the solution and film formation of solvar and acrylic resins. Nauch. trudy MTILP no.30:96-101 '64.

(MIRA 18:6)

2. Kafedra tekhnologii iskusstvennoy kozhi i plerochnyykh materialov Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

KIPNIS, Yu.B.; SHTERN, I.A.; PLOTNIKOV, I.V.; PAVLOV, N.N.; PAVLOV, S.A.

Use of modified polyamides for the finishing of artificial
leather based on rubber. Kozh.-obuv. prom. 6 no.5:31-34
My '64. (MIRA 17:12)

1.5300-66 EWT(m)/EPF(c)/EWP(j)/T RM

ACC NR: AP5025022

SOURCE CODE: UR/0286/65/000/016/0081/0081

AUTHORS: Dobrynina, L. Ye.; Fil'chikov, A. S.; Khromova, N. S.; Pavlov, S. A.

ORG: none

TITLE: A method for plasticizing polyamide products. Class 39, No. 173932

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 81

TOPIC TAGS: plastic, polyamide, formaldehyde

ABSTRACT: This Author Certificate presents a method for plasticizing polyamide products (such as films) with polyesters. To improve their quality, the products are treated with formaldehyde.

SUB CODE: MT,GC/

SUBM DATE: 02Jul64/

ORIG. REF: 000/

OTH REF: 000

Card 1/1

UDC: 678.675.674.002.2:547.281.1

Khoshnood, Z. ... H. V. ... A.

... interaction in the film of ...
synthetic styrene rubber latex obtained by means of ...
Kau.h. i rez. 21 no.4:13-14 Ap '65. (P.R. 19:6)

1. Moskovsky ... Institut legkey (romykhenn ...)

AFANAS'YEV, A.M.; PAVLOV, S.A.; KARPOV, V.L.; ZVEREV, B.I.

X-ray diffraction study of modified polyamides. Plast. massy no.2:32-
34 '65. (MIRA 18:7)

AFANAS'YEV, A.M.; PAILOV, S.A.; KARPOV, V.I.; ZVEREV, B.I.

X-ray diffraction examination of polyamide films cast from
irradiated solutions. Plast. massy no.4:52-55 '65.

(MIRA 18:6)

L 60046-65 ENT(m)/EFF(c)/EFF(n)-2/EXP(j) PC-4/Pr-4/Pu-4 GG/JAJ/RM
ACCESSION NR: AP5018039 UR/0191/65/000/007/0039/0043
678,675-416,01:536,495:66,085.5

AUTHOR: Afanas'yev, A. M.; Pavlov, S. A.

TITLE: Effect of gamma radiation on the thermomechanical properties of polyamide films

SOURCE: Plasticheskiye massy, no. 7, 1965, 39-43

TOPIC TAGS: polyamide film, gamma radiation, polymer film strength, deformation curve

ABSTRACT: Changes occurring in polyamide films under the influence of integral radiation doses up to 500 mrad during heating from 25 to 300C were studied by a thermomechanical method. Mixed polyamides of type AK 50/50, S-6, and ultramide-1S were chosen for the study. The films were prepared from ethanol solutions under near-industrial conditions, subjected to Co60 γ -radiation, and then deformed. The deformation curves were plotted after exposure to 50, 100, 200, and 500 mrad. Starting at about 100 mrad, the irradiated films did not melt at the melting point of the original samples; their deformability in the high-temperature range (150-300C) became limited and decreased with increasing dose. The properties of the irradiated films thus depend not only on the

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ACCESSION NR: AP5018039

structure of the polymer and the integral dose, but also to a considerable extent on the conditions of formation of the films and characteristics of the original structure. By using the optimum conditions of film formation, one can obtain the desired properties (e. g., high thermal stability) in the irradiated materials or articles for a smaller expenditure of radiation energy. "We express our appreciation to Prof. V. L. Karpov for valuable suggestions during the setting up of the experiments and for his interest in this work." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, NP

NO REF SOV: 008

OTHER: 002


Card 2/2

SLAVNOVA, S.S., assistant; PAVLOV, S.A., doktor tekhn. nauk, prof.;
SUSLOV, Yu.I., inzh.

Use of infrared spectroscopy in the study of polymeric materials.
Nauch. trudy MTILP no.30:102-107 '64. (MIFA 18:6)

1. Kafedra fiziki i kafedra tekhnologii iskusstvennoy kozhi i
plenochnykh materialov Moskovskogo tekhnologicheskogo instituta
legkoy promyshlennosti.

KOLOSOVA, G.I., mladshiy nauchnyy sotrudnik; PAVLOV, S.A., doktor tekhn.nauk

Studying the structure of artificial sole leather manufactured
on a base of leather fibers. Report No.3. Nauch.-issl. trudy
VNIIPR no.13:27-32 '62. (MIRA 18:1)

IVANOVA, R.A.; KAS'YANOVA, A.A.; PAVLOV, S.A.

Studying the conditions of the production of films from the complex dispersions of hydrophilic polymers and increasing their water resistance. Kauch. i rez. 2. no.2:12-15 F '65.

(MIRA 18:1

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.

AFANASYEV, A.M.; PAVLOV, I.A.; GVEREV, B.I.; LARION, V.I.

X-ray diffraction study of irradiated polyvinyl. Radiat. phys.
no.1:33-36 '65. (MIRA 18:4)

SLAVNOVA, S S., assistant; PAVLOV, S.A., doktor tekhn. nauk, prof.

Physical methods of analysis of the supermolecular structures of polymers. Nauch. trudy MTILP no.29:103-116 '64. (MIRA 18-4)

1. Kafedry fiziki i tekhnologii iskusstvennoy kozhi i plenochnykh materialov Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

SHVETSOVA, T.P.; SAFRAY, B.A.; PAVLOV, S.A.

Ways to increase the strength of the cement fastening of rubber
soles. Kozh.-obuv.prom. 6 no.10:21-23 0 '64.

(MIRA 18:1)

KHVOSTOV, V.A.; SEMENOV, I.F.; PAVLOV, S.A.

Mechanization of carrot harvesting. Trakt. i sel'khozmasch.
no.11:25-26 N '64. (MIRA 18:1)

L 47339-65 EPE(c)/EPF(n)-2/ENG(j)/EWA(h)/EWP(j)/EWT(m)/EWA(l) Pc-4/Pr-4/Ps-4/
Feb 65/km
ACCESSION NR: AP5009323 S/0191/65/000/004/0052/0055

AUTHORS: Afanas'yev, A. M.; Pavlov, S. A.; Karpov, V. L.; Zverev, B. I.

TITLE: X-ray studies of polyamide films cast from irradiated solutions

SOURCE: Plasticheskiye massy, no. 4, 1965, 52-55

TOPIC TAGS: polyamide, x ray study, irradiation, ordered structure / URS 50 I
x ray instrument, K 20000 irradiation device

ABSTRACT: The results of investigating the structures of films after ⁶⁰Co gamma irradiation of initial concentrated solutions of mixed polyamides are described. X-ray analysis was made on a URS-50-I instrument. The test material was prepared from a 27.6% solution of AK 50/50 (1:1 mixture of epsilon caprolactam and hexamethylenediamine adipate) and 80% ethanol and of a similar solution of S-6 (1:1:1 solution of epsilon caprolactam, hexamethylenediamine adipate, and of another hexamethylenediamine compound) and 80% ethanol. The samples were irradiated in an atmosphere of limited air at a temperature of 20C. After irradiating the solutions with integral doses of 0-500 mrd, the concentration was reduced to 10% (dilution, warming, and shaking). The film was poured from the remaining solution at 60C on a glass base also at 60C. The film was then heated to 75C,

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L 47339-65

ACCESSION NR: AP5009323

and x-ray studies were made. The radiation dose for each test, the refraction angle, half-width of peak, and peak intensity are tabulated in the paper. For AK 50/50 the peak half-width and intensity, characterizing ordered structure, remained practically unchanged at low doses as compared with nonirradiated solutions. Change became noticeable at doses of 100 mrd, but considerable disordering was found to take place only at 500 mrd. For S-6 the relations proved to be different. Increase in radiation dose to 50-100 mrd was accompanied by increased ordering of the macromolecules in the film, but further increase in radiation dose to 500 mrd caused decrease in the crystalline phase. The authors discuss possible causes of these phenomena as well as some other properties, such as oxidizability, viscosity, and loss of transparency. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: 00, 0P

NO REF SOV: 006

OTHER: 004

Card 2/2 CC

SHTERN, I.A.; KIPNIS, Yu.B.; PLOTNIKOV, I.V.; PAVLOV, S.A.; PAVLOV, N.N.;
VTOPOV, G.N.; PROKURAT, R.E.; GLACOLEVA, K.I.; KOCHERZHINSKAYA,
Ye.L.; FEDOROVA, L.V.; MININ, I.T.

Artificial carbocylate leather. Kozh.-obuv. prom. 6
no.2:32-34 F'64. (MIRA 17:5)

SHTERN, I.A., inzh.; PLOTNIKOV, I.V., kand. tekhn. nauk; PAVLOV, S.A., doktor
tekhn. nauk

Obtaining leather-like grain on films during the process of pore
formation. Kozh.-obuv.prom. 6 no.3:22-23 Mr '64. (MIRA 17:4)

PAVLOV, S.A.; GOLUBEV, N.M.

Large-molecule chemistry as a basis for the development of the silk industry. Tekst. prom. 23 no.10:4-7 O '63. (MIRA 17:1)

1. Nachal'nik Upravleniya shelkovoy promyshlennosti, chlen Gosudarstvennogo komiteta po legkoy promyshlennosti pri Gosplane SSSR (for Pavlov). 2. Uchenyy sekretar' Tsentral'nogo nauchno-issledovatel'skogo instituta shelkovoy promyshlennosti (TsNIIShelka) (for Golubev).

PAVLOV, N.N.; ARBUZOV, G.A.; PAVLOV, S.A.; YAO DE-IN [Yao Te-ying]

Action of chromium and aluminum salts on mixed polyamides.
Vysokom. soed. 5 no.10:1558-1561 0 '63. (MIRA 17:1)

1. Moskovskiy tekhnologicheskoy institut legkoy promysh-
lennosti.

POLINSKIY, S.L., inzh.; PLOTNIKOV, I.V., kand. tekhn. nauk; PAVLOV, S.A.,
doktor tekhn. nauk, prof.

Synthesis and investigation of hydrophilic polyester urethanes
for the manufacture of artificial leather with high hygienic
properties. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.4:
54-64 '63. (MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh
materialov i iskusstvennoy kozhi (for Polinskiy, Plotnikov).
2. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti
(for Pavlov).

OTOPKOV, G.M., inzh.; PAVLOV, S.A., doktor tekhn. nauk, prof.

Use of hydrophilic polymers for producing the face layer of artificial leather with a protein fiber base. Report No.1: Increasing the elasticity of films with an AK 60.40 polyamide base by means of the addition of methylol polyamide and salts of trivalent chromium. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.2:40-47 '63. (MIRA 16:10)

1. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti. Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i plenochnyh materialov.

SHTERN, I.A., inzh.; PLOTNIKOV, I.V., kand. tekhn. nauk; PAVLOV, S.A.,
doktor tekhn. nauk, prof.

Investigating the washing out of pore building agents from
carboxyl-containing rubbers. Izv. vys. ucheb. zav.; tekhn.
leg. prom. no.2:48-54 '63. (MIRA 16:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh
materialov i iskusstvennoy kozhi (for Shtern, Plotnikov).
2. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti
(for Pavlov). Rekomendovana kafedroy tekhnologii iskusstvennoy
kozhi i plenochnykh materialov.

BOKOV, Yu.S., mladshiy nauchnyy sotrudnik; MAKAROV-ZEMLYANSKIY, B.Ya.,
assistent; MAKAROV-ZEMLYANSKIY, Ya.Ya., doktor khimicheskikh
nauk, prof.; PAVLOV, S.A., doktor tekhn. nauk, prof.

Interphase polycondensation of acetylated trihydroxyglutaric
acid and hexamethylenediamine. Nauch. trudy MTILP no.24:
30-39 '62. (MIRA 16:7)

1. Nauchno-issledovatel'skaya laboratoriya po polucheniyu
isskustvennoy kozhi i plenochnykh materialov Moskovskogo
tekhnologicheskogo instituta legkoy promyshlennosti.
(Glutaric acid) (Hexandiamine)
(Condensation products (Chemistry))

OVECHENKO, N.G., kand. tekhn. nauk; KRAVKOVA, I.A., mladshiy nauchnyy
sotrudnik; PAVLOV, S.A., doktor tekhn. nauk, prof.

Microstructure of nonwoven fibrous film systems and the effect
exerted on it by the technological procedures. Tekst. prom.
23 no.9:27-30 S '63. (MIRA 16:10)

1. Sotrudniki Moskovskogo tekhnologicheskogo instituta legkoy
promyshlennosti (MTILP).
(Nonwoven fabrics)

OVECHENKO, N.G., kand. tekhn. nauk; DMITRUSHINA, Z.T., inzh.; BARKOVA, L.V.,
inzh.; PAVLOV, S.A., doktor tekhn. nauk, prof.

Effect of the fiber length and amount of bonding materials on
the physiochemical properties of nonwoven fibrous film
systems. Tekst. prom. 23 no.9:30-33 S '63. (MIRA 16:10)

1. Sotrudniki Moskovskogo tekhnologicheskogo instituta legkoy
promyshlennosti (MTILP).
(Nonwoven fabrics)

TAUBMAN, A.B., doktor khimich. nauk, prof.; YANOVA, L.P., kand. khimich. nauk; GORLOVA, G.I., inzh.; MONASTYRSKAYA, M.S., kand. tekhn. nauk, dotsent; PAVLOV, S.A., doktor tekhn. nauk, prof.

Studying the effect of ionizing radiation on films made from carboxylate latex. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.3:12-16 '63. (MIRA 16:7)

1. Akademiya nauk SSSR (for Taubman, Yanova). 2. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti (for Gorlova, Monastyrskaya, Pavlov). Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i plenochnykh materialov Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.
(Rubber, Synthetic) (Ionization)

MONASTYRSKAYA, M.S.; PAVLOV, S.A.; TROPANOVA, T.N.

Use of nairit latex for the gluing of fabrics. Kozh.-obuv.
prom. 4 no.12:17-19 D '62. (MIRA 16:1)
(Adhesives) (Latex)

MOTINA, L.F., kand.tekhn.nauk; PLOTNIKOV, I.V., kand.tekhn.nauk; PAVLOV,
S.A., doktor tekhn.nauk

Fire- and bacteria-resistant materials for mine ventilation
pipes. Nauch.-issl.trudy VNIIPK no.12:30-35 '60. (MIRA 16:2)

(Mine ventilation--Equipment and supplies)
(Protective coatings)

FIRSOVA, K.A., kand.tekhn.nauk; BADANINA, A.I., kand.tekhn.nauk;
PAVLOV, S.A., doktor tekhn.nauk; MOTORINA, L.V., tekhn.

Use of carboxyl-containing rubbers in the manufacture of
artificial leather. Nauch.-issl.trudy VNIIPK no.12:41-49
'60. (MIRA 16:2)

(Leather, Artificial) (Carboxyl groups)

SEVETSOVA, T.P., inzh.; PAVLOV, S.A., doktor tekhn.nauk, prof.; SAFRAY, E.A.,
kand.tekhn.nauk

Investigating the new properties of light-weight porous rubbers. Izv.vys,
ucheb.zav.; tekhn.prom. no.1:45-52 '63. (MIRA 16:3)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i plenochnykh
materialov.

(Rubber—Testing)

SAMYSHKINA, M.A., inzh.; PLOTNIKOV, I.V., kand.tekhn.nauk; PAVLOV, S.A., doktor tekhn.nauk, prof.

Investigating some factors which increase the wear resistance of suede leather processed in an electric field. Report No.1. Izv.vys.ucheb.zav.; tekhn.leg.prom. no.1:53-62 '63. (MIRA 16:3)

11 Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennoy kozhi i plenochnykh materialov (for Samyshkina, Plotnikov).
2. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti (for Pavlov). Rekomendovana kafedroy tekhnologii iskusstvennoy khozhi i Plenochnykh materialov Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

(Leather, Artificial)

KRAVKOVA, I.A., mladshiy nauchnyy sotrudnik; PAVLOV, S.A., doktor tekhn.
nauk, prof.

Microstructure of artificial leather of the coated fabric type.
Kozh.obuv.prom. 4 no.11:33-34 N '62.

, GUA 15:11)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.
(Leather, Artificial) (Microscopy)

MAKAROV-ZEMLYANSKIY, B.Ya., assistant; BOKOV, Yu.S., mladshiy nauchnyy sotrudnik; MAKAROV-ZEMLYANSKIY, Ya.Ya., doktor khimicheskikh nauk, prof.; PAVLOV, S.A., doktor tekhn.nauk, prof.

Polycondensation of xylotrihydroxyglutaric acid and hexamethylene-diamine. Nauch.trudy MTILP no.23:35-43 '61. (MIRA 15:9)

1. Nauchno-issledovatel'skaya laboratoriya po polucheniyu iskusstvennoy kozhi i plenochnykh materialov Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.
(Leatner, Artificial) (Glutaric acid) (Methylenediamine)

BARMINA, K.A., inzh.; PAVLOV, S.A., doktor tekhn.nauk

Increasing the resistance to abrasion of the bleached hair
covering of pelts. Kozh.-pbyv.prom. 4 no.9:32-35 S '62.
(MIRA 15:9)

(Fur---Testing)

S/081/62/000/023/096/120
B101/B186

AUTHORS: Makarov-Zemlyanskiy, B. Ya., Bokov, Yu. S., Makarov-Zemlyanskiy, Ya. Ya., Pavlov, S. A.

TITLE: Polycondensation of xylotrihydroxy glutaric acid with hexamethylene diamine

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 681, abstract 23P118 (Nauchn. tr. Mosk. tekhnol. in-t legkoy prom-sti, no. 23, 1961, 35 - 43)

TEXT: The polycondensation of the salt of trihydroxy glutaric acid and hexamethylene diamine was studied at high temperatures in the melt (165 - 200°C, in the atmosphere of purified N₂) and using solvents (tricresol and xylene) at 170 and 180°C. The kinetic curves for the polycondensation were plotted. The rate of formation of the linear polyamide (PA) was shown to be lower than that of a three-dimensional compound through interaction of the hydroxyl groups of neighboring chains. The resulting PA (molecular weight 950) was found to be unusable as film-forming agent for artificial leather. The possibility of a
Card 1/2

S/081/62/000/023/115/120
B117/B186

AUTHORS: Shvetsova, T. P., Pavlov, S. A., Safray, B. A.

TITLE: New properties of light porous rubbers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 771, abstract
23P639 (Izv. vyssh. uchebn. zavedeniy, Tekhnol. legk.
prom-sti, no. 1, 1962, 40 - 49)

TEXT: The physicochemical properties and the microstructure of monolithic and porous rubbers (PR) produced from the same recipe with different expanding agents (4X3 -5 (ChKhZ-5) and NaHCO_3) have been investigated. With 100, 200, and 300% expansion, the moduli of PR, calculated in kg/g rubber, are higher than the corresponding moduli of the monolithic rubbers (the equation $\sigma_k = 20 \sigma / \gamma \cdot \alpha$ was derived, where σ_k is the tear resistance or the modulus in kg/g rubber; σ the tear resistance in kg/cm^2 ; γ the specific gravity in g/cm^3 ; α the percent of natural rubber content in rubber). The moduli are the higher, the smaller the γ of PR with constant α . The greater the number and the smaller the size of pores, the better are the properties

Card 1/2

MONASTYRSKAYA, M.S., kand.tekhn.nauk, dotsent; PAVLOV, S.A., doktor
tekhn.nauk, prof.; SKORNYAKOVA, T.A., inzh.

Hydrophilic properties of films made from carbonylated latex.
Izv.vys.ucheb.zav.;tekh.leg.prom. no.2:47-52 '62. (MIRA 15:5)

1. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i
plenochnykh materialov.

(Leather, Artificial)

OVECHENKO, N.G., inzh.; PAVLOV, S.A., doktor tekhn.nauk, prof.

Effect of the nature of the binding agents on the physical
and mechanical properties of nonwoven fibrous film systems.
Report No.2. Izv.vys.ucheb.zav.;tekh.leg.prom. no.2:53-59
'62. (MIRA 15:5)

1. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i
plenochnykh materialov.

(Nonwoven fabrics) (Binding materials)

TIMOKHIN, Nikolay Andreyevich; VOLKOV, V.A., inzh., retsenzent;
PAVLOV, S.A., doktor tekhn.nauk, prof., nauchnyy red.;
PLEMYANNIKOV, M.N., red.; ZOLOTAREVA, I.Z., tekhn. red.

[Manufacture of hide glue; new techniques, overall
mechanization, and automation of production]Proizvodstvo
mezdrovogo kleia; novaia tekhnologiia, kompleksnaia mekha-
nizatsiia i avtomatizatsiia proizvodstva). Moskva, Ro-
stekhizdat, 1962. 147 p. (MIRA 15:9)
(Glue) (Automation)

KOROTKOVA, V. M., inzh.; MONASTYRSKAYA, M. S., kand.tekhn.nauk, dotsent;
PAVLOV, S. A., doktor tekhn.nauk, prof.

Studying the reaction of hydrocellulose with carboxylated latexes.
Izv.vys.ucheb.zav.; tekhn.leg.prom. no.4:38-44 '61.

(MIRA 14:10)

1. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i plenochnykh
materialov.

(Latex)
(Cellulose)

OVECHENKO, N.G., inzh.; PAVLOV, S.A., doktor tekhn.nauk.prof.

Effect of the nature of the binding agents on the physical and mechanical properties of nonwoven fibrous film systems. Report no.1. Izv.vys.ucheb.zav.; tekhn.prom. no.1:13-21 '62.
(MIRA 15:2)

1. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i plenochnykh materialov.

(Binding materials)(Textile fibers, Synthetic)

SHVETSOVA, T.P., inzh.; PAVLOV, S.A., doktor tekhn.nauk, prof.; SAFRAY, B.A.,
kand.tekhn.nauk

Studying the new properties of light porous rubber. Report No.1.
Izv.vys.ucheb.zav.; tekhn.prom. no.1:40-49 '62. (MIRA 15:2)

1. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi i plenochnykh
materialov.

(Rubber---Testing)

PAVLOV, S.A.

Conform the research work to the level of the new tasks. Tekst.
prom. 21 no.6:8-12 Je '61. (MIRA 15:2)

1. Direktor TSentral'nogo nauchno-issledovatel'skogo instituta
shelkovoy promyshlennosti.
(Textile research)

36936

S/081/62/000/007/030/033

B168/B101

15 8466

AUTHORS: Ovechenko, N. G., Nad', I., Pavlov, S. A.

TITLE: Artificial fatiguing of adhesion joints between polar polymers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 7, 1962, 653-654, abstract 7P307 (Izv. vyssh. uchebn. zavedeniy. Tekhnol. legk. prom-sti, no. 4, 1961, 27-33)

TEXT: Joints obtained by folding layers of polyamide AK-60/40 (AK-60/40) and nairit HT (NT) (I) were subjected to static fatiguing on a ПНЭ-1 (PNE-1) apparatus by being stretched 25-150% and held in this position, and also to dynamic fatiguing on three apparatuses - a mechanical oscillator ГМК-1 (GMK-1), a machine for multiple stretching and compressing МРС-2 (MRS-2) and a machine of original design with a fatiguing frequency of 3 cycles per minute and producing a deformation of 20%. After fatiguing, the joints were split on a noninertia tensile-testing machine of original design, with which the momentary variation in splitting effort could be followed by means of strain gauges. In order to even out

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ALEKSEYENKO, Vladimir Iosifovich; KOLESNIKOV, Vladimir Nikitich;
SAFRAY, Boris Aleksandrovich; KHROMOVA, Nina Sergeyevna;
~~PAVLOV, S.A., prof.~~, nauchnyy red.; KATS, A.S., inzh.,
nauchnyy red.; GUSEVA, A.I., red.; BATYREVA, G.G., tekhn.
red.

[Design and planning of new and reorganized factories for
artificial (rubber-type) leather] Proektirovanie novykh i
rekonstruiemykh predpriatii iskusstvennoi kozhi (tipa
rezy). Moskva, Izd-vo nauchno-tekhn.lit-ry RSFSR, 1961.
102 p. (MIRA 15:3)

(Rubber goods industry)

GRIGOR'YEVA, N.V., inzh.; PAVLOV, S.A., doktor tekhn.nauk, prof.

Structural and mechanical properties of the leather tissue. Izv.vys.
ucheb.zav.; tekhn.prom. no.3:65-72 '61. (MIRA 14:7)

1. Rekomendovana kafedroy tekhnologii kozhi Kiyevskogo tekhnologicheskogo instituta legkoy promyshlennosti. 2. Nauchno-issledovatel'skiy institut mekhovoy promyshlennosti (for Grigor'yeva). 3. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti (for Pavlov).
(Leather)

ZURABYAN, K.M., kand.tekhn.nauk; PAVLOV, S.A., doktor tekhn.nauk, prof.

Effect of tanning and impregnation methods on the permeability of leather to moisture. Izv. vys. ucheb. zav.; tekhn. leg. prom. no. 1:60-70 '60. (MIRA 14:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut kozhevenno-obuvnoy promyshlennosti (for Zurabyan). 2. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti (for Pavlov). (Leather--Permeability)

KORSHAK, V.V.; VINOGRADOVA, S.V.; ARTEMOVA, V.A.; BABCHINITSER, T.M.;
PAVLOV, S.A.

Laws governing polycoordination and new coordination polymers.
Vysokom.sped. 3 no.7:1117 J1 '61. (MIRA 14:6)
(Polymerization)

PAVLOV, S.A., prof., doktor tekhn.nauk; KRAVKOVA, I.A., mladshiy nauchnyy
sotrudnik

Effect of the manufacturing method on the microstructure of
synthetic rubber kersey. Kozh.-obuv.prom. 2 no.10:17-21 0 '60.
(MIRA 13:11)

1. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti.
(Leather, Artificial)

OVECHENKO, N.G., inzh.; LEVASHEVA, E.M., inzh.; PAVLOV, S.A., doktor tekhn.
nauk, prof.

V/M-type emulsions for bonding fibrous systems. Report No.1.
Izv.vys.ucheb.zav.; tekhn.leg.pro m. no.6:64-69 '60.

(MIRA 14:1)

1. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi.
(Leather substitutes) (Emulsions)

SKORNYAKOVA, T.A.; MONASTYRSKAYA, M.S.; PAVLOV, S.A.

Reactions between carboxylated latexes and ethylene glycol. Kauch. i
rez. 20 no.1:7-10 Ja '61. (MIRA 14:3)

1. Moskovskiy tekhnologicheskoy institut legkoy promyshlennosti.
(Rubber, Synthetic)(Glycols)

YANOVA, L.P., kand.khimicheskikh nauk; MONASTYRSKAYA, M.S., kand.tekhn.
nauk, dotsent; PAVLOV, S.A., doktor tekhn.nauk, prof.; GORBATOVA,
T.T., inzh.

Effect of fillers on the radiation resistance of plasticized
polyvinyl chloride. Izv.vys.ucheb.zav.; tekhn.prom.no.
4:46-52 '60. (MIRA 13:10)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi, (for
Monastyrskaya, Pavlov, Gorbatoval).
2. Akademiya nauk SSSR, (for Yanova).
(Plastics--Testing) (Ethylene)

15.9420 2109, 2209, 1451

20246

S/138/61/000/001/002/010
A051/A029

AUTHORS: Skornyakova, T. A., Monastyrskaya, M. S., Pavlov, S. A.

TITLE: Investigations of the Interaction of Carboxylate Latexes With
Ethylene Glycol

PERIODICAL: Kauchuk i rezina, 1961, No. 1, pp. 7-10

TEXT: Data obtained on the interaction of CKC-30-1 (SKS-30-1) buta-
diene-styrene carboxylate latexes synthesized at the VNIISK and ethylene
glycol are submitted. Table 1 lists the characteristics of the investigated
latexes. Ethylene glycol was used in the pure form according to ГОСТ (ТУ)-
2789-56 [GOST (TU)-2789-56] specifications. Figure 1 a shows the effect of
the pH of the SKS-30-1 latex with 4 % MAK(MAK) on the tear-resistance of
the films when heated under conditions of various temperatures. An increase
in the tear-resistance of the film with a change in pH is explained by the
possible structuralizing with a monovalent sodium ion, just as in the case
of films made of one latex (Ref. 1). It is assumed that the strengthening
of the latex takes place due to the formation of transverse ester bonds.
The highest tear-resistance is reached for films heated to 150°C made of

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S/138/61/000/001/002/010
A051/A029

X

Investigations of the Interaction of Carboxylate Latexes With Ethylene Glycol

SKS-30-1 latexes with 4 % MAK and at a high pH value. In order to establish the presence of chemical bonds in the formed structure, the value of the equilibrium module and weight swelling of the films in benzene and ethyl acetate was determined (Table 2). The conclusion is drawn that an alkaline medium promotes the esterification of the polymer although the saponification reaction becomes irreversible in an alkaline medium (Ref. 9). It was shown experimentally that the tear-resistance of the films depends on the duration of the glycol mixing with alkali. When preliminary mixing of glycol with alkali is undertaken, the quantity of the chemical bonds increases. In order to determine the effect of the initial plasticity of the polymer on the properties of the film, experiments were conducted on SKS-30-1 latex with 4 % MAK (polymer hardness according to Defoe 6,000 g). In this case the tear-resistance of 105 kg/cm² was reached only after the film was heated for 1.5 hours. The effect of the presence of carboxylic groups in the polymer on the tear-resistance of the films was determined for SKS-30-1 latex with 10 % MAK, hardness 4,500 g. The tear-resistance depended on the duration

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S/138/61/000/001/002/010
A051/A029

Investigations of the Interaction of Carboxylate Latexes With Ethylene Glycol

of the heating of the film at 150°C. The effect of the initial plasticity of the polymer and the content of the carboxylic groups was investigated at optimum conditions of mixing. It was noted that in all the films obtained under these conditions the residual elongation did not exceed 9 %. This leads to the conclusion that there are chemical bonds also between the polymer chains. In films obtained from latex at a pH=4 and pH=7 without preliminary mixing of glycol and alkali, the residual elongation exceeds 100 %. The vapor-permeability of the film was determined by the diffusion of water vapors through a 1 cm² film per hour at room temperature in an exsiccator over concentrated sulfuric acid. The same relationship was found to exist between the pH of the latex and the vapor-permeability as between the pH and the tear-resistance (Fig. 4 a, b, c). The initial plasticity of the polymer and the content of methacrylic acid in it have the same effect on the vapor-permeability as on the tear-resistance. An increase in the tear-resistance of the films is connected with the formation of a spatial structure. The initial plasticity of the polymer has no significant effect on the tear-resi-

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S/138/61/000/001/002/010
A051/A029

Investigations of the Interaction of Carboxylate Latexes With Ethylene Glycol

stance. An increase in the carboxylic group content in the SKS-30-1 polymer brings about an increase in this index. There are 4 sets of graphs, 5 tables, and 10 references: 7 Soviet, 3 English.

ASSOCIATION: Moskovskiy tekhnologicheskii institut legkoy promyshlennosti
(Moscow Technological Institute of the Light Industry)

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S/138/61/000/001/002/010
A051/A029

Investigations of the Interaction of Carboxylate Latexes with Ethylene Glycol

Table 1:

Characteristics of SKS-30-1 butadiene-styrene carboxylic latexes

No. of batch	Content of methacrylic acid (MAK), %	pH	Concentration of latex, %	Hardness of polymer according to Defoe, G
145	4	4	22.4	4,000
65	4	4.3	22.7	6,000
339	10	4.2	13.2	4,500

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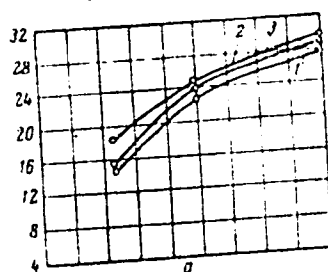
202h6

S/138/61/000/001/002/010
AO51/AC29

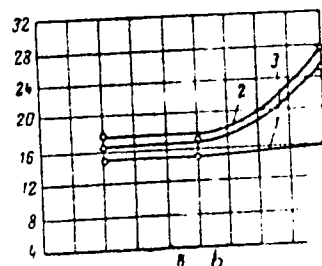
Investigations of the Interaction of Carboxylate Latexes With Ethylene Glycol

Figure 1:

Effect of pH of SKS-30-1 latex with 4 % MAK and a hardness according to Defoe of 4,000 g on the tear-resistance of the films when heated under conditions of various temperatures. Vertical legend: tear-resistance, kg/cm^2
1 - 20°C, 2 - 100°C, 3 - 150°C.



a - without additions



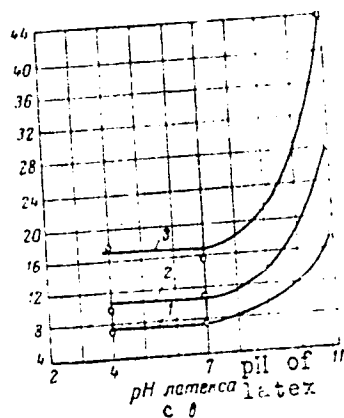
b - with addition of glycol

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Investigations of the Interaction of Carboxylate Latexes With Dimethyl
Glycol

Figure 1: (continued)



c - with addition of glycol and orthophosphoric acid

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A051/A029

Investigations of the Interaction of Carboxylate Latexes With Ethylene Glycol

Table 2: Equilibrium module and weight swelling of the films in benzene and ethyl acetate

Method of film production	pH	Equilibrium module			Swelling, weight %					
		kg/cm ²			in benzene			in ethyl acetate		
		temperature of heating, °C			temperature of heating, °C			temperature of heating, °C		
		20	100	150	20	100	150	20	100	150
from latex	4	-	-	-	1800	1050	1300	-	-	-
	7	-	-	-	1800	1050	1200	-	-	-
	11	7,4	-	7,7	1650	900	1000	-	-	-
from latex with glycol	4	-	-	-	2200	970	1370	850	720	820
	7	-	-	-	2400	980	1510	1000	740	850
	11	3,76	8,61	10,6	1000	750	760	750	530	550
from latex with glycol and orthophosphoric acid	4	-	3,2	-	1000	1650	800	870	1200	800
	7	-	-	-	1000	1600	1100	950	1300	920
	11	4,61	8,4	11,5	1200	920	680	650	550	420

20240

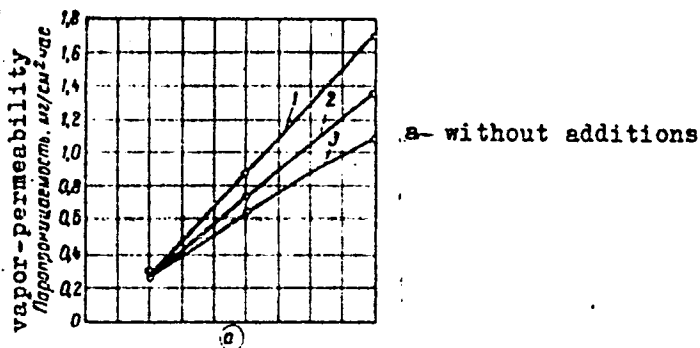
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A051/A029

Investigations of the Interaction of Carboxylate Latexes With Ethylene Glycol

Figure 4:

Relationship of the vapor-permeability of the films to the pH of SKS-30-1 latex with 4 % MAK and polymer hardness according to Defoe of 4,000 g when heated under conditions of various temperatures:

1 - 20°C, 2 - 100°C, 3 - 150°C.



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Effect of the composition of the solvent mixture on the mechanism of
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no.4:25-30 '60. (MIRA 13:10)

1. Moskovskiy tekhnologicheskii institut legkoy promyshlennosti.
Rekomendovana kafedroy tekhnologii iskusstvennoy kozhi.
(Films (Chemistry)) (Polyamides)

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(Leather, Artificial) (Latex)

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BORODINA, V.N., inzh.; MONASTYRSKAYA, M.S., kand. tekhn. nauk dots.;
YANOVA, L.P., kand. khim. nauk; PAVLOV, S.A., doktor tekhn. nauk
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PAVLOV, S.A.

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Use of polyamide finishing coatings in manufacturing artificial leather with a nitrocellulose base. Izv.vys.ucheb.zav.;
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(Resins, Synthetic) (Leather, Artificial)

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Problem of ion deposits of carboxylate latices. Report No.1:
Preparation of fabrics coated with carboxylate latex by the method
of ion deposition. Kauch. i rez. 18 no.1:13-15 Ja '59.

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(Rubber coatings) (Ion exchange)

PAVLOV, Sergey Aleksandrovich, prof.; AVILOV, Aleksey Alekseyevich,
~~Kand. tekhn. nauk, D.D.S.S.O.M.~~, Nikolay Konstantinovich, prof.;
MONASTYRSKAYA, Mariya Solomonovna, dotsent; KHROMOVA, Nina
Sergeyevna, dotsent; KUZ'MINSKIY, A.S., prof., retsenzent;
KIPNIS, B.Ya., inzh., retsenzent; MINAYEVA, T.M., red.;
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[Technology of artificial leather] Tekhnologiya iskusstvennoi
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(Leather, Artificial)

LYUDVIG, P.; MONASTYRSKAYA, M.S.; PAVLOV, S.A.

Reinforcing rubber in latex by combining latex mixtures with
condensation resins. Kauch. i rez. 17 no.3:12-15 Mr '58.

(MIRA 11:6)

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(Rubber coating) (Leather, Artificial)

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no.5:22-26 My '58. (MIRA 11:6)

(Latex)

S/0081/64/000/008/S095/S095

ACCESSION NR: AR4042252

SOURCE: Ref. zh. Khimiya, Abs. 88573

AUTHOR: Samy*shkina, M. A.; Pavlov, S. A.; Plotnikov, I. V.

TITLE: Adhesion of butadiene-nitrile rubber (SKN-26) to cellophane and polyamide

CITED SOURCE: Nauchno-issled. tr. Vses. n.-i. in-t plenochn. materialov i
tekhnstv. kosh, sb. 14, 1963, 134-143

TOPIC TAGS: butadiene nitrile rubber, cellophane, polyamide, polymer, adhesion

TRANSLATION: Investigates adhesion of film of SKN-26 [SKN-26, 100pts; dioctyl phthalate, 18 pts; ZnO, 5 pts; S 1 pt; thiuram, 1 pt; resin (rosin, coumaroneindene, n-tert-butyl phenolformaldehyde PB, epoxide E-2000) 5-30 pts], decanted from 10% solution in butylacetate to cellophane and polyamide AK 60/40 (from 12% solution in 95% alcohol) on the adhesiometer of the Central Scientific Research Institute for Leather Substitutes. The introduction of all the resins except rosin increases adhesion to cellophane significantly and to polyamide,

Cord 1/2

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ABRAMOVA, V.V., starshiy nauchnyy sprazhnik; PAVLOV, N.I., doktor tekhn. nauk,
prof.

Bicarbonate of ammonium as a new pore-forming agent for the manufacture
of suede type artificial leather. Kozn.-obuv. prom. 6 no. 2-23-40. Sp
'64.

SLAVNOVA, S.S.; KIRAKOSJANC, M.Ch. [Kirakosyants, M.Kh.]; STRACHOV, I.P.
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1. Moscow Higher School of Technology of the Light Industry
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of Technology, Bratislava for Benes and Blazej).